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THE IDENTITY OF *APHELORIA CORIACEA* (DIPLOPODA, XYSTODESMIDAE)

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The precise identity of the milliped *Apheloria coriacea* (Koch) has apparently never been satisfactorily established. In fact there is evidence that some recent writers have applied the name to at least two different species. This confusion is due largely to the fact that no usable description of the species has been published, and the male gonopods, which provide the most reliable diagnostic features, have not been illustrated.

Since the time of the original description of the species in 1847, the name *coriacea* has been generally accepted by millipede workers. Two notable exceptions obtain in Dr. H. C. Wood and Dr. Carl Attems, both of whom seem to have overlooked the description of the species. Attems' recent monograph of the polydesmoid diplopods (1937-1939) includes *A. corrugata* (Wood), a name which was shown by Bollman to be a synonym of *coriacea* as long ago as 1888.

The purpose of the present paper is to provide a detailed description of the species, as well as to illustrate the male and female gonopods.

From the original description, little information of diagnostic value can be gathered beyond the size and color pattern, but fortunately a type locality is mentioned—"Virginien." There is only one known xystodesmid in Virginia (and near-by states) to which Koch's description could apply. It seems reasonable to assume that the original types were collected in eastern Virginia, where so far only this one xystodesmid has been found. The types of *coriacea* are apparently lost, and neotypes are herein designated to form the basis of the following descriptions.

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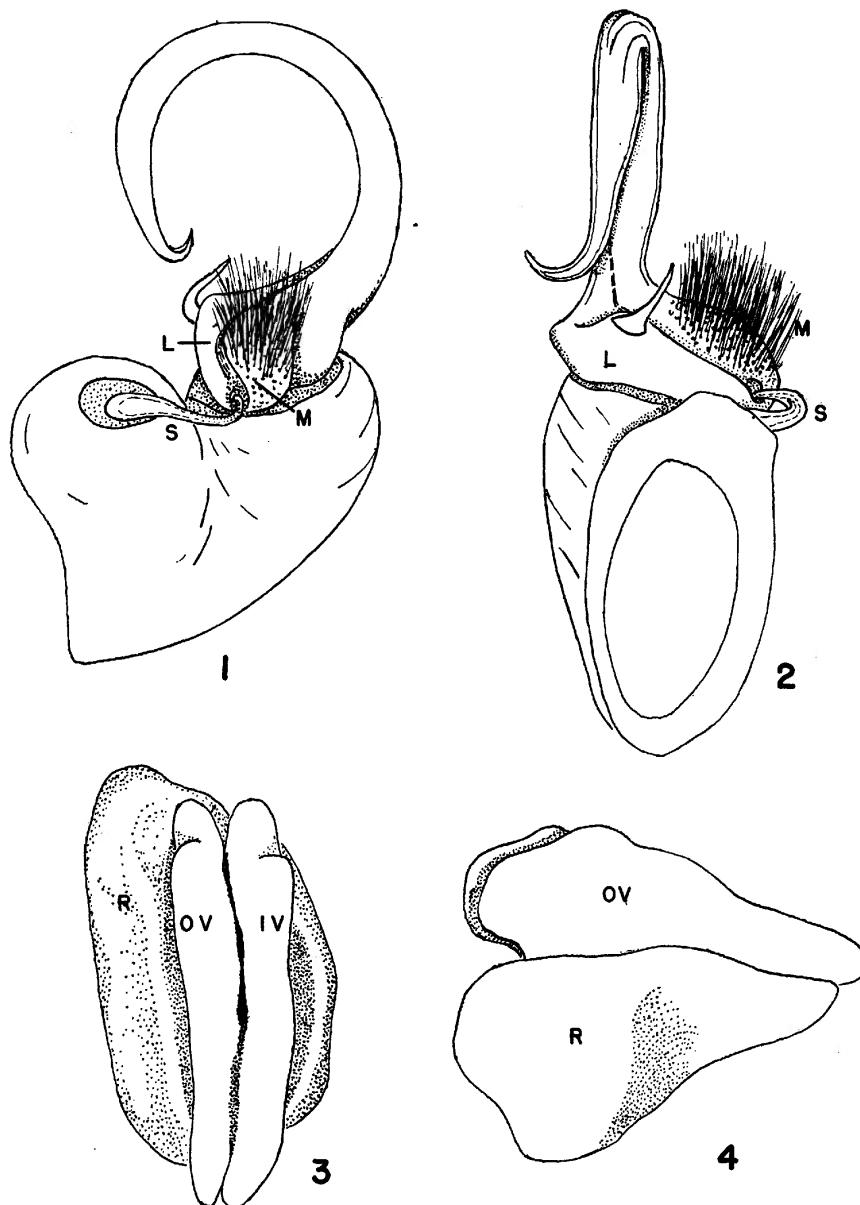


FIG. 1. *Apheloria coriacea*, left gonopod of male, mesial aspect. Abbreviations: L, lateral process; M, mesial process; S, solenite.

FIG. 2. Left gonopod of male, cephalic aspect, abbreviations as in figure 1.

FIG. 3. Left gynopod of female, distal aspect. Abbreviations: R, receptacle; OV, outer valve, IV, inner valve.

FIG. 4. Left gynopod, lateral aspect, abbreviations as in figure 3.

A thorough treatment of the genus *Apheloria* is now in preparation but will not be completed for some time; hence the present information is published separately for the benefit of other workers.

APHELORIA CHAMBERLIN

Apheloria Chamberlin, 1921, Canadian Ent., vol. 53, p. 231 (*Fontaria montana* Bollman, generotype).

Apheloria coriacea (Koch)

Figures 1-4

Fontaria coriacea Koch, 1847, System der Myriapoden, p. 141.

Polydesmus (Fontaria) corrugatus Wood, 1864, Proc. Acad. Nat. Sci. Philadelphia, p. 7.

TYPE LOCALITY: "Virginien," here restricted to Swann's Point Plantation, 6 miles north of Surry Court House, Surry County, Virginia; across the James River from Jamestown Island.

TYPE SPECIMENS: Neoholotype male and neallotype female deposited in the collection of the American Museum of Natural History; a neoparatype male in the United States National Museum, No. 1832; and one in the writer's collection, No. 15; all were collected on April 20, 1947, by R. L. Hoffman and J. P. E. Morrison.

DIAGNOSIS: A large member of the genus, characterized by the color pattern and by the configuration of the gonopods. The dorsum blackish with keels red and posterior margins of tergites yellow; lateral process of telopodite of male gonopod represented by a slightly elevated transverse ridge across the cephalic portion of the base, bearing a slender, curved, mesocaudally directed spine; distal end of telopodite blade curved laterad.

DESCRIPTION OF NEOHOLOTYPE: Body robust, length 39, width 9.5 mm.; sides subparallel, segments 5 through 15 of nearly full width; body tapering abruptly cephalad, more gradually caudad. Tergites well arched, keels wide, continuing slope of dorsum.

Collum crescentic in dorsal aspect, caudolateral edges tapering cephalad; lateral marginal ridges distinct.

Segments 2 through 4 subsimilar, caudal margin of tergites straight, caudal edges of keels swept forward, smoothly rounded; marginal thickenings present but poorly defined.

Segments 5 through 15 generally similar, caudal margins of keels slightly produced caudad, caudolateral corners of keels produced into small pointed lobes; sides of keels smooth, rounded; cephalolateral corners broadly rounded. Dorsal marginal thickenings very prominent, smooth in contrast to the granular upper surface of the keel and strikingly coriaceous dorsum. Suture between prozonites and metazonites prominent, surface of former smooth.

Segments posterior to twelfth agree with those preceding, but with keels becoming increasingly produced caudad, and entire segments becoming narrower; keels of nineteenth are largely elongated, broadly oval lobes which are longer than the tergite at midline.

Anal segment triangular in dorsal aspect, tip slightly truncated, two subterminal lateral setiferous tubercles. Anal valves inflated, very smooth, the setiferous tubercles almost obsolete; mesial ridges very prominent. Pre-anal scale broadly triangular.

Bases of last pair of legs in contact. All sternites smooth, glabrous, not produced noticeably at the bases of the legs; those between the third, fourth, and fifth pairs of legs with small, rounded lobes. Prefemora and femora bearing large sharp spines. Terminal tarsal joint equal to proximal two, much shorter than femur; tarsi sparingly hirsute.

Gonopods protruding from a large ovoid aperture. At rest, the appendages are retracted snugly against the sternites and the telopodite blades lie together, often interlocked. When in use, the gonopods are protruded so that the axes of the telopodite coil are parallel with the median axis of the body with the distal end of the blade cephalad. Directions referred to in connection with the gonopods are derived from the appendage in this position.

Mesial process a large, rounded, very setiferous shoulder. Lateral process represented by a conspicuous, flattened, mesially elevated ridge projecting obliquely transverse across the cephalic portion of the gonopod, bearing a long, slender, meso-caudally directed spine just below its highest portion. Blade of telopodite bent into a nearly complete circle, in one plane except the distal eighth, which is bent laterad. A conspicuous groove between the lateral and mesial processes, commencing at the inner termination of the former and continuing up the lateral edge of the telopodite blade. At the base of the lateral process is a deep

depression, this connected by the "solenite"¹ to the coxal joint of the appendage. For details of the gonopods, consult figures 1 and 2, from which some of the setae have been omitted in the interests of clarity.

Second pair of legs with the usual cylindrical, distally truncate seminal lobes. Pregenital limbs more hairy than the postgenital, their femora without spines.

Color (from living specimen) as follows: Tergites glossy dark brown, almost black, caudolateral portions of keels rose pink, posterior margins of tergites with bright, lemon yellow cross bands which touch the reddish keels without grading into them. Head tan in front, antennae somewhat darker. Under parts in general yellowish tan, sternites slightly darker.

DESCRIPTION OF NEALLOTYPE: Agreeing in most respects with the male; differing in the following respects: body broader, more compact, tergites more arched, marginal ridges of keels not especially distinct and upper surface of keel not different in texture from rest of dorsum. Length 35.5, width 8.6 mm.

Gynopods² relatively large, composed of the following parts: an irregularly shaped, box-like receptacle, somewhat triangular in lateral aspect and longer than high; containing a retractable pair of long, slender, opposable valves, hinged at the cephalic end and capable of being withdrawn into the base. These parts are strongly chitinous and situated on the end of a protrusible sac of sclerotized tissue. The gynopods are shown in figures 3 and 4.

Color pattern similar to that of the male, but cross bands wider and expanded at midline into small, semicircular yellow spots.

RANGE: Exact limits of the range are not yet known with certainty. Specimens have been examined from Virginia, Maryland, Pennsylvania, New York, Ohio, West Virginia, and Indiana. Various literature references (not wholly trustworthy) report the species from North Carolina and Kentucky, in the south, and Michigan in the north. Numerous range extensions and refinements can be expected in the future following additional field work.

¹ The "hufthornchen" of German workers. The term "solenite" is here tentatively employed pending refinement of a better terminology.

² A term tentatively used instead of the customary "vulvae." It is felt that "vulvae" should apply strictly only to the parts herein referred to as "valves" and that the term "gynopod" is a somewhat more meaningful one.

REMARKS: Judging from the large number of specimens that have found their way to museum collections, *coriacea* must be the commonest member of the genus. The color pattern is almost diagnostic in itself, but is approximated in a few other eastern xystodesmids in *Apheloria* and other genera.

It should be mentioned here that bleached museum specimens cannot at present be infallibly determined as *coriacea*. Certain other members of the genus possess gonopods which are almost identical, and distinctions can be made only on the basis of color pattern. Some of these forms are *A. montana* (Bollman), *roanea* Chamberlin, and *tigana* Chamberlin.

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